



Department of the Navy Combined Heat and Power Installations



Russell Dominy, CEM





Navy/Marine Corps CHP Sites

- NSB New London, Groton CT.-5.5MW Solar Turbine Generator with 52 KPPH HRSG, Operational Dec. 97
- PNSY (ESPC Proj 1), Kittery ME.-5.5MW Solar Turbine Generator with 70 KPPH HRSG, Operational Dec. 00
- MCAGCC Twentynine Palms, CA.-7.2MW solar Turbine Generator with 30KPPH HRHWG, Operational May 03
- NSY Portsmouth (ESPC Proj 2), Kittery ME.-5.5 MW Solar Turbine Generator With 70 KPPH HRSG, 2 70 kPPH Packaged Boilers, Operational Dec 03
- NMC Balboa, CA.-4.2MW Solar Turbine Generator with HRSG, Operational June 03



PNSY ESPC Proj. 1, Year 1 - System Availability

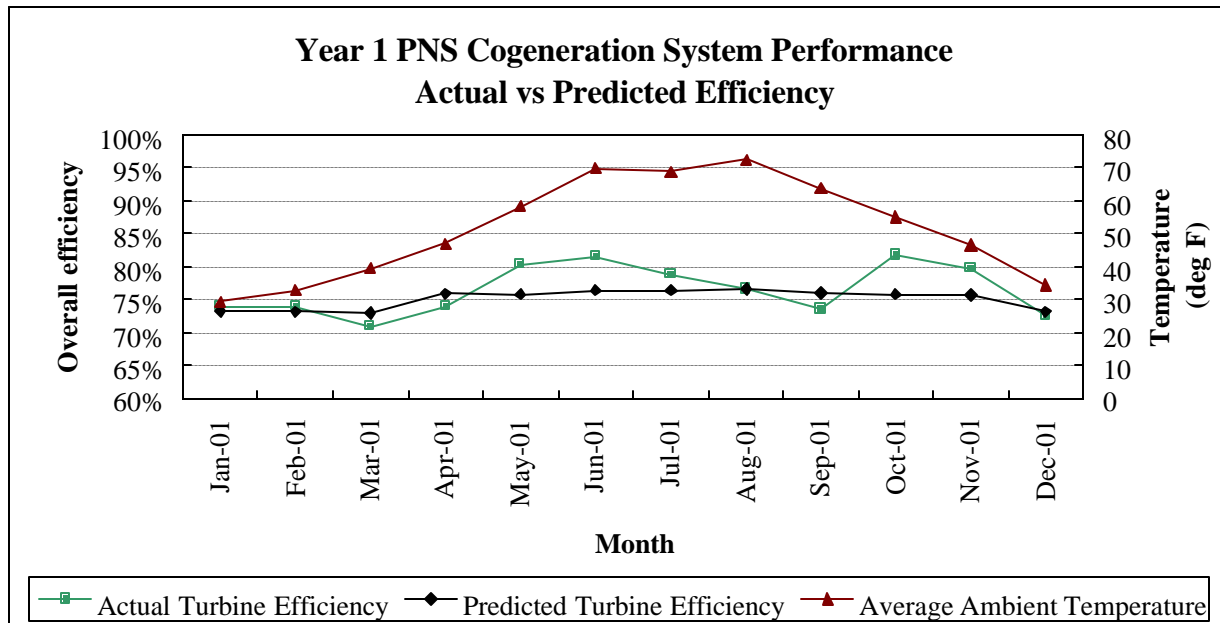


- Cogeneration system will be available a minimum of 85% of the time annually for electricity and steam production

Month	Total Monthly Hours	Actual Equipment Availability (Hours)	Equipment Unavailability Due to SESI Responsibility (Hours)	Equipment Run-Time (Hours)	Hours Equipment Not Operated by PNS
Dec 2000 – Nov 2001	8,016	7853	162	6,875	979
Dec 2001	744	460	284	460	0
Year 1 Totals	8,760	8,313	446	7,335	979
Year 1 %	N/A	94.9%	5.1%	83.7%	11.2%



PNSY Cogeneration System Performance



Please note that the cogeneration system efficiency varies with ambient temperature, equipment loading, and duct burner operation.



PNSY Projected & Verified Energy Savings



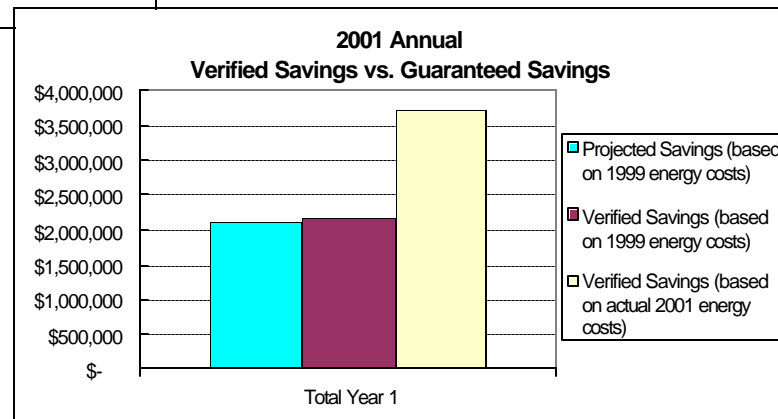
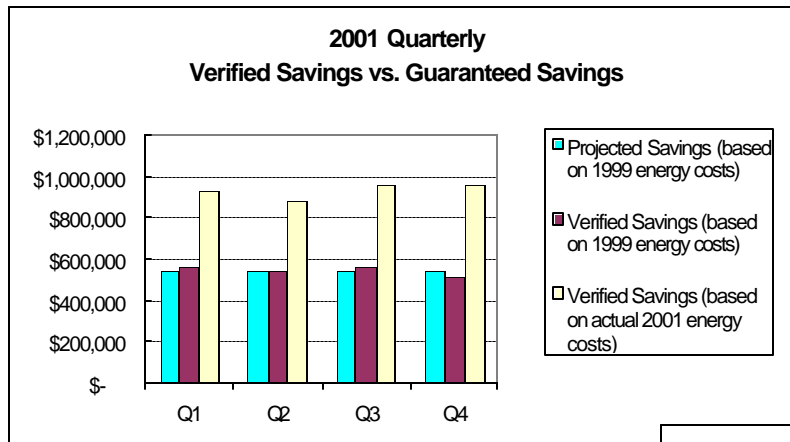
Total Year 1	Power Plant Upgrade	Steam / HW System Improvements	Total Savings
Projected Energy Savings (Based on 1999 energy costs)			
	\$1,789,842	\$330,737	\$2,120,579
Verified Energy Savings (Based on 1999 energy costs)			
	\$1,836,667	\$329,121 *	\$2,165,788
Verified Energy Savings (Based on 2001 energy costs)			
	\$2,821,571	\$889,363 *	\$3,710,934

* Verified Savings for Steam / HW Sys Improvements include a steam trap savings adjustment.



PNSY

2001 ESPC Energy Savings





Selecting the Appropriate Level of Verification Effort

Energy Measure	Investment	Projected Annual Savings	Annual M&V Cost	Annual O&M Cost
ECSM-1 Power Plant Upgrade	\$9,941,217	\$1,789,842	\$23,630	\$236,068
ECSM-2 Measure	\$1,026,480	\$330,737	\$12,734	\$81,595
Total	\$10,967,697	\$2,120,579	\$36,364	\$317,663

ECSM-2 Measure Breakdown	Projected Annual Savings	Annual M&V Cost	Annual O&M Cost
Boiler Decentralization	\$48,282	\$2,678	\$1,451
HW Pumping Upgrades	\$9,958	\$2,168	\$795
Steam Traps	\$272,497	\$7,888	\$79,349